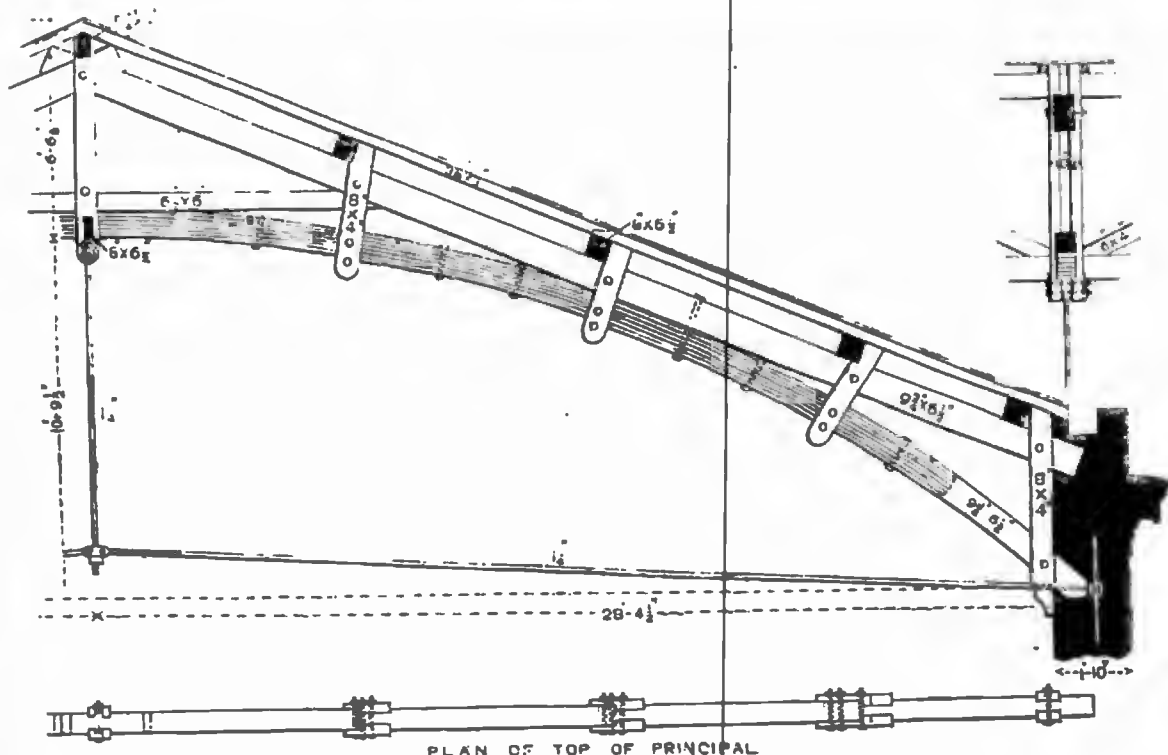


ROOF OVER LUGGAGE SHED, ST. GERMAIN AND ROUEN RAILWAY, PARIS.



PLAN OF TOP OF PRINCIPAL

5. The machine, which, once presented to the rock, projects into it simultaneously four horizontal series of sixteen scalpels, working backwards and forwards, by means of springs cased in, and put in motion by the same water power. While these are at work, one vertical series on each side works simultaneously up and down, so that together they cut out four blocks, or rather insulate four blocks on all sides, except on the rock behind, from which they are afterwards detached by hand.

During the operation, a squirt-pump throws out a jet of water between each pair of scalpels to prevent the heating of the tools, to soften the stone somewhat, and to wash out the rubbish.

After their complete separation, the blocks are pulled out by help of the endless cable, and received in a waggon underneath, to be withdrawn from the tunnel altogether.

The rocks expected to be found are gypsum, limestone, and quartz veins. No loam-drift or loam-springs are likely, it is thought, to interfere with the progress of the work, or to require any masonry within the tunnel. It has been already ascertained that each of the two machines, at the opposite ends of the tunnel, will excavate to the extent of 22 feet a day, and it is estimated that the whole excavation will be completed in four years. The gallery to be perforated by the machines will be 13 feet wide by 7 feet high, and this once cut through, the bore will be enlarged by ordinary means to 25 feet in width and 19 feet in height, and a double line of rails laid.

Ventilation is to be effected by attaching a ventilator to the axis of each *pousie de support*, the movement of which being rapid and continuous, the ventilating machine, composed of a drum and a tube, will be constantly inspiring fresh air and expiring foul.

The estimated cost of this great tunnel is only 13,804,942f. (552,197l.) It is to be immediately commenced at the north entrance.

WORKMEN'S LIBRARIES.—A large and influential meeting of the parochial authorities of Whitechapel, and the working men of the district, was recently held, for the purpose of opening a Working Men's Library and Reading-room. Upwards of 1,300 working men were present. Lord Ashley presided,

ROOF OF A LUGGAGE AND GOODS SHED AT THE PARIS STATION OF THE ST. GERMAIN AND ROUEN RAILWAY.

This roof was erected about six years ago by M. Armand, architect. The span between the walls is 56 feet 9 inches, and the distance of the principals (three in number), from centre to centre, is 18 feet. The timber arch, or bow, consists of seven thicknesses of plank, together 9½ inches deep: they are bolted together about every 2 feet: the ends of the bow are solid, and are connected with the laminated part by alits being cut in the solid timber into which the alternate thicknesses of the laminated part are fitted, and then bolted together; by which means greater solidity is obtained at the ends, for securing the 1½ inch iron tie rod which connects them. The absence of any wall plate here is rather remarkable. The arch is secured to the principal rafter by double ties, which are bolted to both: the ridge is trussed from one principal to the other, giving great stiffness to the whole framing. From calculations, it appears that the quantity of timber in the principals (or supporting parts) is, within a small fraction, two-thirds of that employed in the purlins, rafters, &c., or parts supported.

The roof is covered with zinc on poplar boards, only seven-teenths of an inch thick.

C. F.

A FEW WORDS ABOUT THE '51 EXHIBITION, SAID AT KENSINGTON.

THE proposition "That the proposed exhibition will be of great advantage to all classes, whether as producers, distributors, or consumers," has already been moved to the world, and carried unanimously. I can scarcely, therefore, expect that Kensington, from its locality—from its position as the friendly battle-field on which this fight is to be fought, in which both are to be victors—that Kensington, connected as it is so much more nearly with our estimable and admirable Sovereign than any other district, will receive with anything but the utmost enthusiasm a suggestion made by Her husband, whose triumph is unquestionably looked upon by her as her own. The notion of an exhibition of this sort has occupied many minds for a long time; but it needed the power of a prince to give it shape, and transform it from the suggestion of

an exhibition of the works of the United Kingdom into an Exhibition of the Industry of all Nations. But a very few years back, princes were otherwise employed than in making and carrying out such suggestions. Our historians are records, as you all well know, rather of tumults and battles than of peaceful progress: the memorials we have raised are to soldiers and sailors: but I think the time is coming when those who make the unhealthy town healthy—who lengthen life and increase enjoyments—those who have harnessed steam and chained the lightning, will have memorials erected to them. "Peace hath her victories as well as war," and it appears to me that this exhibition is a step in the right direction towards obtaining a recognition of the peace victors,—a step tending to attain a right appreciation of the dignity of labour, and of the gratitude we owe to art. The endeavour of my life, if I may be permitted an egotistical allusion simply to show you this is no new opinion on my part, has been to popularize art, and put within the means of the multitude its enjoyments,—to aid in extending a knowledge and love of art, and to raise the character of the artist in the mind of his fellows. I have always maintained, and will maintain, that to those who create for us elevating joys, give us fine thoughts, and noble aspirations, our gratitude and thanks are due. What would a country be without the fine arts? Rightly does Thomson say, that however wealth may increase, and the land may be overspread by luxury,—

"Yet, these neglected,—these recording arts,—
Wealth rots a nuisance, and oblivious sulk,
That nation must another Carthage lie."

Some have asked, "But what good is to follow from this Exhibition?" "What good is it to be to me?" And some have whispered,—"Why should I show to others that which will let them know what I have done, and what I can do, and so enable them to compete with me?" I would venture to remind those who do so whisper, that "There is that scattereth and yet increaseth, and there is that withholdeth more than is meet, but it tendeth to poverty." How does a master teach his pupil but by setting before him fine works as examples? how do we endeavour to form and improve our own taste but by examining those works which have received the applause and the stamp of approbation of wise